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Europäisches
Patentamt

European
Patent Office

Office européen
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Generalkdirektion 2

Directorate General 2

Direction Générale 2

Knudsen, Sten Lottrup
Novozymes A/S,
Patents,
Krogshøjvej 36
2880 Bagsvaerd
DANEMARK



Formalities Officer

Name: HINGEL

Tel.: 8717

Date

25-06-2003

Reference
10177.205-EP

Application No./Patent No.
01927640.1 - 2405

Applicant/Proprietor
Novozymes A/S

Noting of loss of rights pursuant to Rule 69(1) EPC

In respect of the European patent application cited above,

- ☐ no priority right exists because
- ☐ the deficiency with regard to the date of priority has not been remedied within the time limit according to Rule 41(3) EPC (EPO Form 1051).
 - ☐ the priority date no longer lies within the 12-month period for claiming priority (Art. 87(1) EPC) as a result of the re-dating of the application according to Rule 43(1) or (2) EPC (EPO Form 1114).
 - ☐ the priority date no longer lies within the 12-month period for claiming priority (Art. 87(1) EPC) as a result of the accordal of a date of filing pursuant to Rule 39 EPC (EPO Form 1042).
- ☒ the right of priority US60/203,345 (10.05.2000) ; US60/277,817 (21.03.2001)
has been lost under Article 91(3) EPC because
- ☐ the indication of the file number of the previous application
 - ☒ the certified copy of the previous application
- from which priority is claimed has not been filed in due time.

MEANS OF REDRESS:

1. Request for a decision

If the applicant considers that the finding of the European Patent Office is inaccurate, he may, within (a non-extendable period of) **TWO MONTHS** after notification of this communication, apply in writing for a decision on the matter by the European Patent Office (Rule 69(2) EPC). The application can only lead to the finding being reversed, if this does not actually correspond to the factual or legal situation.

2. Restitutio in integrum

The applicant who, in spite of all due care required by the circumstances having been taken, was unable to observe the time limit, shall, upon application, have his rights re-established provided that the time limits and formal requirements laid down in Article 122 EPC are complied with.

Attention is drawn to the fact that re-establishment into the period according to Article 87(1) EPC is excluded (Art. 122(5) EPC).

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Registered letter
EPO Form 1070 09.00 LOPR PRIO

26



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Formalities Officer

Name: HINGEL

Tel.: 8717

Date

04-03-2003

Reference
10177.205-EP

Application No./Patent No.
01927640.1 - 2405

Applicant/Proprietor
Novozymes A/S

Notification pursuant to Rules 41(1), 111(2) EPC in conjunction with Article 91(1) EPC

Your attention is drawn to the following deficiency in the above-identified European patent application:

☐ The indication of the file number(s) of the previous application(s) from which priority is claimed is (are) missing.

☒ A copy of the previous application from which priority is claimed is missing.

..... US 60/203,345 (10.05.2000) and US 60/277,817 (21.03.2001) x)

The copy must be certified as an exact copy of the previous application by the authority which received the previous application and shall be accompanied by a certificate issued by that authority stating the date of filing of the previous application.

Where multiple priorities are claimed, ALL copies must be filed within the time limit specified below.

In the event of failure to remedy the indicated deficiency within **TWO MONTHS** after notification of this communication, the right of priority will be lost for the application (Art. 91(3) EPC).

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M. NEUMANN
(-7161)

x)

The documents were not
received at WIPO





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Section de
Dépôt

WIPO
The International Bureau
34, Chemin des Colombettes
CH-1211 GENEVA 20
SWITZERLAND

EPO - DG 1

30. 12. 2002

(104)

Datum/Date

09-12-2002

Zeichen/Ref./Réf. 10177.205-EP	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. PCT/DK0100286 - EP/01927640.1-2405 /
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire Novozymes A/S	

For the aforementioned application, you are hereby notified that the EPO has not received:

- () a) the notification of election (Rule 61.2 PCT)
- () b) the copy of the international preliminary examination report (Art. 36(3)(a) PCT)
- ☒ c) the copy (copies) of the priority document(s) (Rule 17.2(a) PCT).
(the 2 US prio-documents)
- ()

You are kindly requested to forward the missing item at your earliest convenience to the EPO in its capacity as designated/elected Office.

RECEIVING SECTION

Answer of the International Bureau [IB]:

- () The requested item [a), b) or (c)] is not available with the IB.

Reason: *have not been rec'd at the IB...*

- () The applicant has requested the receiving Office to issue a priority document [c)] pursuant to Rule 17.1(b) PCT, but the IB did not receive it.

The International Bureau



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Knudsen, Sten Lottrup
Novozymes A/S,
Patents,
Krogshøjvej 36
2880 Bagsvaerd
DANEMARK

Datum/Date

27/12/02

Zeichen/Ref./Réf. 10177.205-EP	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. 01927640.1-2405 / 1280919
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire Novozymes A/S	

**NOTIFICATION OF EUROPEAN PUBLICATION NUMBER AND INFORMATION
ON THE APPLICATION OF ARTICLE 67(3) EPC**

The provisional protection under Article 67(1) and (2) EPC in the individual Contracting States becomes effective only when the conditions referred to in Article 67(3) EPC have been fulfilled (for further details, see information brochure of the European Patent Office "National Law relating to the EPC" and additional information in the Official Journal of the European Patent Office).

Pursuant to Article 158(1) EPC the publication under Article 21 PCT of an international application for which the European Patent Office is a designated Office takes the place of the publication of a European patent application.

The bibliographic data of the above-mentioned Euro-PCT application will be published on 05.02.03 in Section I.1 of the European Patent Bulletin.

The European publication number is 1280919.

In all future communications to the European Patent Office, please quote the application number plus Directorate number.

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Date

27-12-2002

Reference 10177.205-EP	Application No./Patent No. 01927640.1 - 2405 PCT/DK0100286
Applicant/Proprietor Novozymes A/S	

Communication pursuant to Rules 109 and 110 EPC

(1) Amendment of application documents, especially the claims (Rule 109 EPC)

The above mentioned international (Euro-PCT) application has entered the European phase, or can do so, once the necessary conditions are fulfilled.

Under Articles 28, 41 PCT, Rules 52, 78 PCT and Rule 86(2) to (4) EPC, the applicant may amend the application documents after receiving the international search report.

Whether or not he has already done so, he now has a further opportunity to file amended claims or other application documents within a non-extendable time limit of ONE MONTH after notification of the present communication (Rule 109 EPC).

The claims applicable on expiry of the above time limit, i.e. those filed on entry into the European phase or in response to the present communication, will form the basis for the calculation of any claims fee to be paid (see page 2) and for any supplementary search to be carried out under Article 157(2) EPC (Rule 109 EPC).



Date

Sheet 2

Application No. 01927640.1

(2) Claims fees under Rule 110 EPC

If the application documents on which the European grant procedure is to be based comprise more than ten claims, a claims fee shall be payable for the eleventh and each subsequent claim within the period provided for in Rule 107(1) EPC.

- ☒ Based on the application documents currently on file, all necessary claims fees have already been paid (or the documents do not comprise more than 10 claims).
- ☐ All necessary fees will be/have been debited automatically according to the automatic debit order.
- ☐ The claims fee due for the claims to were not paid within the above-mentioned period.

Any non-paid claims fee, either based on the current set of claims or on any amended claims to be filed pursuant to Rule 109 EPC (see page 1), may still be validly paid within a non-extendable period of grace of **ONE MONTH** after notification of this communication.

If a payment is made for only some of the claims, it must be indicated for which claims it is intended. If a claims fee is not paid in due time, the claim concerned is deemed to be abandoned (Rule 110(4) EPC).

If claims fees have already been paid, but on expiry of the above-mentioned time limit there is a new set of claims containing fewer fee-incurring claims than previously, the claims fees in excess of those due under Rule 110(2), 2nd sentence, EPC will be refunded (Rule 110(3) EPC).

You are reminded that any supplementary search under Article 157(2) EPC will relate only to the last set of claims applicable on expiry of the above time limit AND will be confined to those fee-incurring claims for which fees have been paid in due time.

The fee for the eleventh and each subsequent claim is EUR 40,00.

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The International Bureau
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CH-1211 GENEVA 20
SWITZERLAND

Datum/Date

09-12-2002

Zeichen/Ref./Réf. 10177.205-EP	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. PCT/DK0100286 - EP/01927640.1-2405 /
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire Novozymes A/S	

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- ☒ c) the copy (copies) of the priority document(s) (Rule 17.2(a) PCT).
(the 2 US prio-documents)
- ()

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Reason:

- () The applicant has requested the receiving Office to issue a priority document [c)] pursuant to Rule 17.1(b) PCT, but the IB did not receive it.

The International Bureau



An das Europäische Patentamt

Nur für ab 1. Juli 1999 eingereichte internationale Anmeldungen!

**Eintritt in die
europäische Phase
(EPA als Bestimmungsamt
oder ausgewähltes Amt)**

To the European Patent Office

Only for international applications filed from 1 July 1999 onwards!

**Entry into the
European phase
(EPO as designated or
elected Office)**

A l'Office européen des brevets 1

Seulement pour les demandes internationales déposées à compter du 1^{er} juillet 1999!


**Entrée dans la
phase européenne
(l'OEB agissant en qualité
d'office désigné ou élu)**

Europäische Anmeldenummer oder, falls nicht bekannt, PCT-Aktenzeichen oder PCT-Veröffentlichungsnummer	European application number, or, if not known, PCT application or publication number	Numéro de dépôt de la demande de brevet européen ou, à défaut, numéro de dépôt PCT ou de publication PCT
01927640.1 (PCT/DK01/00286)		
Zeichen des Anmelders oder Vertreters (max. 15 Positionen)	Applicant's or representative's reference (max. 15 spaces)	Référence du demandeur ou du mandataire (15 caractères ou espaces au maximum)
10177.205-EP		
<input checked="" type="checkbox"/> 1. Anmelder Die Angaben über den (die) Anmelder sind in der internationalen Veröffentlichung enthalten oder vom Internationalen Büro nach der internationalen Veröffentlichung vermerkt worden.	1. Applicant Indications concerning the applicant(s) are contained in the international publication or recorded by the International Bureau after the international publication.	1. Demandeur Les indications concernant le(s) demandeur(s) figurent dans la publication internationale ou ont été enregistrées par le Bureau international après la publication internationale.
<input type="checkbox"/> Änderungen, die das Internationale Büro noch nicht vermerkt hat, sind auf einem Zusatzblatt angegeben.	Changes which have not yet been recorded by the International Bureau are set out on an additional sheet.	Les changements qui n'ont pas encore été enregistrés par le Bureau international sont indiqués sur une feuille additionnelle.
Zustellschrift (siehe Merkblatt II, 1)	Address for correspondence (see Notes II, 1)	Adresse pour la correspondance (voir notice II, 1)
EPO - DG 1 25.10.2002		
2. Vertreter Name (Nur einen Vertreter angeben, der in das europäische Patentregister eingetragen und an den zugestellt wird) Geschäftsanschrift Telefon Telefax Telex	2. Representative Name (Name only one representative who will be listed in the Register of European Patents and to whom notification will be made) Address of place of business Sten Lottrup Knudsen Novozymes A/S Patents Krogshøjvej 36 DK-2880 Bagsværd, DENMARK Telephone +45 8824 9999 Fax Telex +45 4442 6080 Additional representative(s) on additional sheet	2. Mandataire Nom (N'indiquer qu'un seul mandataire, qui sera inscrit au Registre européen des brevets et auquel signification sera faite) Adresse professionnelle Téléphone Téléfax Télex
<input checked="" type="checkbox"/> Weitere(r) Vertreter auf Zusatzblatt		Autre(s) mandataire(s) sur une feuille additionnelle
3. Vollmacht <input type="checkbox"/> Einzelvollmacht ist beigelegt. <input checked="" type="checkbox"/> Allgemeine Vollmacht ist registriert unter Nummer: <input type="checkbox"/> Allgemeine Vollmacht ist eingereicht, aber noch nicht registriert. <input type="checkbox"/> Die beim EPA als PCT-Anmeldeamt eingereichte Vollmacht schließt ausdrücklich die europäische Phase ein.	3. Authorisation Individual authorisation is attached. General authorisation has been registered under No: 42893 A general authorisation has been filed, but not yet registered. The authorisation filed with the EPO as PCT receiving Office expressly includes the European phase.	3. Pouvoir Un pouvoir spécial est joint. Un pouvoir général a été enregistré sous le n°: Un pouvoir général a été déposé, mais n'est pas encore enregistré. Le pouvoir général déposé à l'OEB agissant en qualité d'office récepteur au titre du PCT s'applique expressément à la phase européenne.

<p><input checked="" type="checkbox"/> 4. Prüfungsantrag Hiermit wird die Prüfung der Anmeldung gemäß Art. 94 EPU beantragt. Die Prüfungsgebühr wird (wurde) entrichtet.</p> <p>Prüfungsantrag in einer zugelassenen Nichtamtssprache (siehe Merkblatt III, 5.2) :</p>	<p>4. Request for examination Examination of the application under Art. 94 EPC is hereby requested. The examination fee is being (has been, will be) paid.</p> <p>Request for examination in an admissible non-EPO language (see Notes III, 5.2) :</p>	<p>4. Requête en examen Il est demandé que soit examinée la demande de brevet conformément à l'art. 94 CBE. Il est (a été, sera) procédé au paiement de la taxe d'examen.</p> <p>Requête en examen dans une langue non officielle autorisée (voir notice III, 5.2) :</p>
<p>Hermed begæres prøvning af ansøgningen i henhold til art. 94</p>		
<p><input type="checkbox"/> 5. Abschriften Zusätzliche Abschrift(en) der im ergänzenden europäischen Recherchenbericht angeführten Schriftstücke wird (werden) beantragt.</p> <p>Anzahl der zusätzlichen Sätze von Abschriften</p>	<p>5. Copies Additional copy (copies) of the documents cited in the supplementary European search report is (are) requested.</p> <p>Number of additional sets of copies</p>	<p>5. Copies Prière de fournir une ou plusieurs copies supplémentaires des documents cités dans le rapport complémentaire de recherche européenne.</p> <p>Nombre de jeux supplémentaires de copies</p>
<p>6. Für das Verfahren vor dem EPA bestimmte Unterlagen</p> <p>6.1 Dem Verfahren vor dem EPA als Bestimmungsamt (PCT I) sind folgende Unterlagen zugrunde zu legen:</p> <p><input checked="" type="checkbox"/> die vom Internationalen Büro veröffentlichten Anmeldungsunterlagen (mit allen Ansprüchen, Beschreibung und Zeichnungen), gegebenenfalls mit den geänderten Ansprüchen nach Art. 19 PCT</p> <p><input type="checkbox"/> soweit sie nicht ersetzt werden durch die beigefügten Änderungen.</p> <p><i>Falls nötig, sind Klarstellungen auf einem Zusatzblatt einzureichen!</i></p> <p>6.2 Dem Verfahren vor dem EPA als ausgewähltem Amt (PCT II) sind folgende Unterlagen zugrunde zu legen:</p> <p><input checked="" type="checkbox"/> die dem internationalen vorläufigen Prüfungsbericht zugrunde gelegten Unterlagen, einschließlich seiner eventuellen Anlagen (Solche Anlagen müssen immer beigefügt werden)</p> <p><input checked="" type="checkbox"/> soweit sie nicht ersetzt werden durch die beigefügten Änderungen.</p> <p><i>Falls nötig, sind Klarstellungen auf einem Zusatzblatt einzureichen!</i></p> <p><input checked="" type="checkbox"/> Sind dem EPA als mit der internationalen vorläufigen Prüfung beauftragten Behörde Versuchsberichte zugegangen, dürfen diese dem Verfahren vor dem EPA zugrunde gelegt werden.</p>	<p>6. Documents intended for proceedings before the EPO</p> <p>6.1 Proceedings before the EPO as designated Office (PCT I) are to be based on the following documents:</p> <p>the application documents published by the International Bureau (with all claims, description and drawings), where applicable with amended claims under Art. 19 PCT</p> <p>unless replaced by the amendments enclosed.</p> <p><i>Where necessary, clarifications must be submitted on a separate sheet!</i></p> <p>6.2 Proceedings before the EPO as elected Office (PCT II) are to be based on the following documents:</p> <p>the documents on which the international preliminary examination report is based, including its possible annexes (Such annexes must always be filed)</p> <p>unless replaced by the amendments enclosed.</p> <p><i>Where necessary, clarifications must be submitted on a separate sheet!</i></p> <p>If the EPO as International Preliminary Examining Authority has received test reports, these may be used as the basis of proceedings before the EPO.</p>	<p>6. Pièces destinées à la procédure devant l'OEB</p> <p>6.1 La procédure devant l'OEB agissant en qualité d'office désigné (PCT I) doit se fonder sur les pièces suivantes :</p> <p>les pièces de la demande publiée par le Bureau international (avec toutes les revendications, la description et les dessins), éventuellement avec les revendications modifiées conformément à l'article 19 du PCT</p> <p>dans la mesure où elles ne sont pas remplacées par les modifications jointes.</p> <p><i>Le cas échéant, des explications doivent être jointes sur une feuille additionnelle!</i></p> <p>6.2 La procédure devant l'OEB agissant en qualité d'office élu (PCT II) doit se fonder sur les pièces suivantes :</p> <p>les pièces sur lesquelles se fonde le rapport d'examen préliminaire international, y compris ses annexes éventuelles (De telles annexes sont toujours à joindre)</p> <p>dans la mesure où elles ne sont pas remplacées par les modifications jointes.</p> <p><i>Le cas échéant, des explications doivent être jointes sur une feuille additionnelle!</i></p> <p>Si l'OEB, agissant en qualité d'administration chargée de l'examen préliminaire international, a reçu des rapports d'essais, ceux-ci peuvent constituer la base de la procédure devant l'OEB.</p>

<p>7. Übersetzungen Beigefügt sind die nachfolgend angekreuzten Übersetzungen in einer der Amtssprachen des EPA (Deutsch, Englisch, Französisch):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Im Verfahren vor dem EPA als Bestimmungsamt oder ausgewähltem Amt (PCT I + II): <input type="checkbox"/> Übersetzung der ursprünglich eingereichten internationalen Anmeldung (Beschreibung, Ansprüche, etwaige Textbestandteile in den Zeichnungen), der veröffentlichten Zusammenfassung, und etwaiger Angaben über biologisches Material nach Regel 13^{ter}.3 und 13^{ter}.4 PCT <input type="checkbox"/> Übersetzung der prioritätsbegründenden Anmeldung(en) <input type="checkbox"/> Es wird hiermit erklärt, daß die internationale Anmeldung in ihrer ursprünglich eingereichten Fassung eine vollständige Übersetzung der früheren Anmeldung ist (Regel 38(5) EPU) <input type="checkbox"/> Zusätzlich im Verfahren vor dem EPA als Bestimmungsamt (PCT I): <input type="checkbox"/> Übersetzung der nach Art. 19 PCT geänderten Ansprüche nebst Erklärung, falls diese dem Verfahren vor dem EPA zugrunde gelegt werden sollen (siehe Feld 6) <input type="checkbox"/> Zusätzlich im Verfahren vor dem EPA als ausgewähltem Amt (PCT II): <input type="checkbox"/> Übersetzung der Anlagen zum internationalen vorläufigen Prüfungsbericht 	<p>7. Translations Translations in one of the official languages of the EPO (English, French, German) are enclosed as crossed below:</p> <ul style="list-style-type: none"> <input type="checkbox"/> In proceedings before the EPO as designated or elected Office (PCT I + II): Translation of the international application (description, claims, any text in the drawings) as originally filed, of the abstract as published and of any indication under Rule 13^{ter}.3 and 13^{ter}.4 PCT regarding biological material Translation of the priority application(s) It is hereby declared that the international application as originally filed is a complete translation of the previous application (Rule 38(5) EPC) <input type="checkbox"/> In addition, in proceedings before the EPO as designated Office (PCT I): Translation of amended claims and any statement under Art. 19 PCT, if the claims as amended are to form the basis for the proceedings before the EPO (see Section 6) <input type="checkbox"/> In addition, in proceedings before the EPO as elected Office (PCT II): Translation of any annexes to the international preliminary examination report 	<p>7. Traductions Vous trouverez, ci-joint, les traductions cochées ci-après dans l'une des langues officielles de l'OEB (allemand, anglais, français) :</p> <ul style="list-style-type: none"> <input type="checkbox"/> Dans la procédure devant l'OEB agissant en qualité d'office désigné ou élu (PCT I + II): Traduction de la demande internationale telle que déposée initialement (description, revendications, textes figurant éventuellement dans les dessins), de l'abrégé publié, et de toutes indications visées aux règles 13^{ter}.3 et 13^{ter}.4 du PCT concernant le matériel biologique Traduction de la (des) demande(s) ouvrant le droit de priorité Il est déclaré par la présente que la demande internationale telle que déposée initialement est une traduction intégrale de la demande antérieure (règle 38(5) CBE) <input type="checkbox"/> De plus, dans la procédure devant l'OEB agissant en qualité d'office désigné (PCT I) : Traduction des revendications modifiées et de la déclaration faite conformément à l'article 19 du PCT, si la procédure devant l'OEB doit être fondée sur les revendications modifiées (voir la rubrique 6) <input type="checkbox"/> De plus, dans la procédure devant l'OEB agissant en qualité d'office élu (PCT II) : Traduction des annexes du rapport d'examen préliminaire international
<p><input type="checkbox"/> 8. Biologisches Material Die Erfindung bezieht sich auf bzw. verwendet biologisches Material, das nach Regel 28 EPU hinterlegt worden ist.</p> <p><input type="checkbox"/> Die Angaben nach Regel 28(1)(c) EPU (falls noch nicht bekannt, die Hinterlegungsstelle und das (die) Bezugszeichen (Nummer, Symbole usw.) des Hinterlegers) sind in der internationalen Veröffentlichung oder in der gemäß Feld 7 eingereichten Übersetzung enthalten auf:</p> <p>Seite(n) / Zeile(n)</p> <hr/> <p><input type="checkbox"/> Die Empfangsbescheinigung(en) der Hinterlegungsstelle</p> <p><input type="checkbox"/> ist (sind) beigefügt</p> <p><input type="checkbox"/> wird (werden) nachgereicht</p> <p><input type="checkbox"/> Verzicht auf die Verpflichtung des Antragstellers nach Regel 28(3) auf gesondertem Schriftstück</p>	<p><input type="checkbox"/> 8. Biological material The invention relates to and/or uses biological material deposited under Rule 28 EPC.</p> <p>The particulars referred to in Rule 28(1)(c) EPC (if not yet known, the depository institution and the identification reference(s) [number, symbols etc.] of the depositor) are given in the international publication or in the translation submitted under Section 7 on:</p> <p>page(s) / line(s)</p> <hr/> <p>The receipt(s) of deposit issued by the depository institution</p> <p>is (are) enclosed</p> <p>will be filed at a later date</p> <p>Waiver of the right to an undertaking from the requester pursuant to Rule 28(3) attached.</p>	<p><input type="checkbox"/> 8. Matière biologique L'invention concerne et/ou utilise de la matière biologique, déposée conformément à la règle 28 CBE.</p> <p>Les indications visées à la règle 28(1)(c) CBE (si pas encore connues, l'autorité de dépôt et la (les) référence(s) d'identification [numéro ou symboles etc.] du déposant) figurent dans la publication internationale ou dans une traduction produite conformément à la rubrique 7 à la / aux:</p> <p>page(s) / ligne(s)</p> <hr/> <p>Le(s) récépissé(s) de dépôt délivré(s) par l'autorité de dépôt</p> <p>est (sont) joint(s)</p> <p>sera (seront) produit(s) ultérieurement</p> <p>Renonciation, sur document distinct, à l'engagement du requérant au titre de la règle 28(3).</p>

<p>9. Nucleotid- und Aminosäuresequenzen Die nach Regeln 5.2 und 13^{ter} PCT sowie Regel 111(3) EPÜ erforderlichen Unterlagen liegen dem EPA bereits vor.</p> <p><input checked="" type="checkbox"/> Das schriftliche Sequenzprotokoll wird anliegend in einer Amtssprache des EPA nachgereicht.</p> <p><input type="checkbox"/> Das Sequenzprotokoll geht nicht über den Inhalt der Anmeldung in der ursprünglich eingereichten Fassung hinaus.</p> <p><input type="checkbox"/> Der vorgeschriebene Datenträger ist beigelegt.</p> <p><input type="checkbox"/> Die auf dem Datenträger gespeicherte Information stimmt mit dem schriftlichen Sequenzprotokoll überein.</p>	<p>9. Nucleotide and amino acid sequences The items necessary in accordance with Rules 5.2 and 13^{ter} PCT and Rule 111(3) EPC have already been furnished to the EPO.</p> <p>The written sequence listing is furnished herewith in an official language of the EPO.</p> <p>The sequence listing does not include matter which goes beyond the content of the application as filed.</p> <p>The prescribed data carrier is enclosed.</p> <p>The information recorded on the data carrier is identical to the written sequence listing.</p>	<p>9. Séquences de nucléotides et d'acides aminés Les pièces requises selon les règles 5.2 et 13^{ter} PCT et la règle 111(3) CBE ont déjà été déposées auprès de l'OEB.</p> <p>La liste de séquences écrite est produite ci-joint dans une des langues officielles de l'OEB.</p> <p>La liste de séquences ne contient pas d'éléments s'étendant au-delà du contenu de la demande telle qu'elle a été déposée.</p> <p>Le support de données prescrit est joint.</p> <p>L'information figurant sur le support de données est identique à celle que contient la liste de séquences écrite.</p>
<p>10. Benennungsgebühren*</p> <p><input checked="" type="checkbox"/> 10.1 Es ist derzeit beabsichtigt, den siebenfachen Betrag einer Benennungsgebühr zu entrichten. Damit gelten die Benennungsgebühren für alle Vertragsstaaten des EPÜ¹ als entrichtet (Art. 2 Nr. 3 GebO), soweit sie in der internationalen Anmeldung bestimmt sind.</p> <p><input type="checkbox"/> 10.2 Abweichend von der Erklärung in Nr. 10.1 ist derzeit beabsichtigt, weniger als sieben Benennungsgebühren für folgende in der internationalen Anmeldung bestimmte Vertragsstaaten des EPÜ² zu entrichten:</p> <p>(1) <input type="text"/></p> <p>(2) <input type="text"/></p> <p>(3) <input type="text"/></p>	<p>10. Designation fees*</p> <p>10.1 It is currently intended to pay seven times the amount of the designation fee. The designation fees for all the EPC contracting states¹ designated in the international application are thereby deemed to have been paid (Art. 2 No. 3 RFees).</p> <p>10.2 The declaration in No. 10.1 does not apply. Instead, it is currently intended to pay fewer than seven designation fees for the following EPC contracting states² designated in the international application:</p> <p>(4) <input type="text"/></p> <p>(5) <input type="text"/></p> <p>(6) <input type="text"/></p>	<p>10. Taxes de désignation*</p> <p>10.1 Il est actuellement envisagé de payer un montant correspondant à sept fois la taxe de désignation. Les taxes de désignation sont ainsi réputées payées pour tous les Etats contractants de la CBE¹ désignés dans la demande internationale (art. 2, point 3 du RRT).</p> <p>10.2 Contrairement à ce qui est indiqué au n° 10.1, il est actuellement envisagé de payer moins de sept taxes de désignation pour les Etats contractants de la CBE² suivants désignés dans la demande internationale:</p> <p>(4) <input type="text"/></p> <p>(5) <input type="text"/></p> <p>(6) <input type="text"/></p>
<p>Soweit unter Nr. 10.2 Vertragsstaaten aufgeführt sind, wird beantrag, für die dort nicht aufgeführten Vertragsstaaten von der Zustellung einer Mitteilung nach Regel 108(3) EPÜ abzusehen.</p> <p><input checked="" type="checkbox"/> 10.3 Wird ein automatischer Abbuchungsauftrag erteilt (Feld 12), so wird das EPA beauftrag, bei Ablauf der Grundfrist nach Regel 107 (1)(d) EPÜ den siebenfachen Betrag einer Benennungsgebühr abzubuchen. Ist eine Erklärung nach Nr. 10.2 abgegeben worden, so sollen die Benennungsgebühren nur für die dort angegebenen Vertragsstaaten abgebucht werden, sofern dem EPA nicht bis zum Ablauf der Grundfrist ein anderslautender Auftrag zugeht.</p>	<p>If contracting states are indicated under No. 10.2, it is requested that no communication under Rule 108(3) EPC be issued for contracting states not thus indicated.</p> <p>10.3 If an automatic debit order has been issued (Section 12), the EPO is authorised, on expiry of the basic period under Rule 107(1)(d) EPC, to debit seven times the amount of the designation fee. If states are indicated under No. 10.2, the EPO will debit designation fees only for those states, unless instructed otherwise before the basic period expires.</p>	<p>Si des Etats contractants sont mentionnés au n° 10.2, prière de ne pas procéder à la signification d'une notification prévue par la règle 108(3) CBE pour les Etats contractants n'ayant pas été y mentionnés.</p> <p>10.3 Si un ordre de prélèvement automatique est donné (rubrique 12), il est demandé à l'OEB de prélever, à l'expiration du délai normal visé à la règle 107(1)(d) CBE, un montant correspondant à sept fois la taxe de désignation. Si une déclaration a été faite au n° 10.2, les taxes de désignation ne sont à prélever que pour les Etats contractants qui y sont indiqués, sauf instruction contraire reçue par l'OEB avant l'expiration du délai normal.</p>
<p>* Form 1200 (01.02) nur verwenden für internationale Anmeldungen, die ab 1. Juli 1999 eingereicht worden sind.</p>	<p>* Use Form 1200 (01.02) only for international applications filed from 1 July 1999 onwards</p>	<p>* Veuillez utiliser le formulaire 1200 (01.02) seulement pour les demandes internationales déposées à compter du 1^{er} juillet 1999.</p>
<p><small>1 Stand bei Drucklegung: 20 Vertragsstaaten, und zwar: / Status when this form was printed: 20 contracting states, namely: / Situation à la date d'impression: 20 Etats contractants, à savoir: AT Österreich / Austria / Autriche, BE Belgien / Belgium / Belgique, CH/LI Schweiz und Liechtenstein / Switzerland and Liechtenstein / Suisse et Liechtenstein, CY Zypern / Cyprus / Chypre, DE Deutschland / Germany / Allemagne, DK Dänemark / Denmark / Danemark, ES Spanien / Spain / Espagne, FI Finnland / Finland / Finlande, FR Frankreich / France / France, GB Vereinigtes Königreich / United Kingdom / Royaume-Uni, GR Griechenland / Greece / Grèce, IE Irland / Ireland / Irlande, IT Italien / Italy / Italie, LU Luxemburg / Luxembourg / Luxembourg, MC Monaco / Monaco / Monaco, NL Niederlande / Netherlands / Pays-Bas, PT Portugal / Portugal / Portugal, SE Schweden / Sweden / Suède, TR Türkei / Turkey / Turquie</small></p> <p><small>2 Für Türkei nur möglich, falls in der internationalen Anmeldung am oder nach dem 1. November 2000 bestimmt. / For Turkey possible only if designated in the international application on or after 1 November 2000. / En ce qui concerne la Turquie, seulement si la désignation a été effectuée dans la demande internationale le 1^{er} novembre 2000 ou à une date ultérieure.</small></p>		

<p><input checked="" type="checkbox"/> 11. Erstreckung des europäischen Patents Diese Anmeldung gilt auch als Erstreckungsantrag für alle in der internationalen Anmeldung bestimmten Nicht-Vertragsstaaten des EPÜ, mit denen bei Einreichung der internationalen Anmeldung »Erstreckungsabkommen« in Kraft waren. Die Erstreckung wird jedoch nur wirksam, wenn die vorgeschriebene Erstreckungsgebühr entrichtet wird. Es ist derzeit beabsichtigt, die Erstreckungsgebühr für die nachfolgend angekreuzten Staaten zu entrichten:</p> <p><input type="checkbox"/> SI Slowenien <input type="checkbox"/> LT Litauen <input type="checkbox"/> LV Lettland <input type="checkbox"/> AL Albanien <input type="checkbox"/> RO Rumänien <input type="checkbox"/> MK Ehemalige jugoslawische Republik Mazedonien <input type="checkbox"/> _____¹⁾</p> <p>¹⁾ Platz für Staaten, mit denen »Erstreckungsabkommen« nach Drucklegung dieses Formblatts in Kraft treten und die in der internationalen Anmeldung bestimmt waren.</p>	<p>11. Extension of the European patent This application is also considered as being a request for extension to all the non-Contracting States to the EPC designated in the international application with which "extension agreements" were in force on the date of filing the international application. However, the extension only takes effect if the prescribed extension fee is paid. It is currently intended to pay the extension fee for the States marked with a cross below:</p> <p>Slovenia Lithuania Latvia Albania Romania Former Yugoslav Republic of Macedonia <input type="checkbox"/> _____¹⁾</p> <p>¹⁾ Space for States with which "extension agreements" enter into force after this form has been printed and which were designated in the international application.</p>	<p>11. Extension des effets du brevet européen La présente demande est également réputée demande d'extension à tous les Etats non contractants de la CBE désignés dans la demande internationale, avec lesquels existaient, lors du dépôt de la demande, des »accords d'extension«. Toutefois, l'extension ne produit ses effets que si la taxe d'extension prescrite est acquittée. Il est actuellement envisagé de payer la taxe d'extension pour les Etats dont le nom est coché ci-après:</p> <p>Slovénie Lituanie Lettonie Albanie Roumanie Ex-République yougoslave de Macédoine <input type="checkbox"/> _____¹⁾</p> <p>¹⁾ Prévu pour des Etats à l'égard desquels des »accords d'extension« entreraient en vigueur après l'impression du présent formulaire et qui ont été désignés dans la demande internationale.</p>
<p><input checked="" type="checkbox"/> 12. Automatischer Abbuchungsauftrag (Nur möglich für Inhaber von beim EPA geführten laufenden Konten) Das EPA wird beauftragt, nach Maßgabe der Vorschriften über das automatische Abbuchungsverfahren fällige Gebühren und Auslagen vom untenstehenden laufenden Konto abzubuchen. In Bezug auf die Benennungsgebühren wird auf Feld 10.3 verwiesen. Das EPA wird ferner beauftragt, die Erstreckungsgebühren für jeden in Feld 11 angekreuzten »Erstreckungsstaat« bei Ablauf der Grundfrist zu ihrer Zahlung abzubuchen, sofern ihm nicht bis dahin ein anderslautender Auftrag zugeht.</p> <p>Nummer und Kontoinhaber <input type="text"/></p>	<p>12. Automatic debit order (for EPO deposit account holders only) The EPO is hereby authorised, under the Arrangements for the automatic debiting procedure, to debit from the deposit account below any fees and costs falling due. For designation fees, see Section 10.3. The EPO is also authorised, on expiry of the basic period for paying the extension fees, to debit those fees for each of the "extension states" marked with a cross in Section 11, unless instructed otherwise before the said period expires.</p> <p>Number and account holder 2803.0007 - Novozymes A/S</p>	<p>12. Ordre de prélèvement automatique (uniquement possible pour les titulaires de comptes courants ouverts auprès de l'OEB) Par la présente, il est demandé à l'OEB de prélever du compte courant ci-dessous les taxes et frais venant à échéance, conformément à la réglementation relative au prélèvement automatique. Pour les taxes de désignation, se reporter à la rubrique 10.3. Il est en outre demandé à l'OEB de prélever, à l'expiration du délai normal prévu pour leur paiement, les taxes d'extension pour chaque »Etat autorisant l'extension« coché à la rubrique 11, sauf instruction contraire reçue avant l'expiration de ce délai.</p> <p>Numéro et titulaire du compte 2803.0007 - Novozymes A/S</p>
<p><input checked="" type="checkbox"/> 13. Eventuelle Rückzahlungen auf das beim EPA geführte laufende Konto Nummer und Kontoinhaber <input type="text"/></p>	<p>13. Any reimbursement to EPO deposit account Number and account holder 2803.0007 - Novozymes A/S</p>	<p>13. Remboursements éventuels à effectuer sur le compte courant ouvert auprès de l'OEB Numéro et titulaire du compte 2803.0007 - Novozymes A/S</p>
<p>14. Unterschrift(en) des (der) Anmelders (des) oder Vertreters Ort / Datum Für Angestellte (Art. 133(3) EPÜ) mit allgemeiner Vollmacht: Nr. <input type="text"/></p> <p><small>Name(s) des (des) Unterzeichneten bitte in Druckschrift wegschreiben. Bei juristischen Personen bitte auch die Stellung des (des) Unterzeichneten innerhalb der Gesellschaft in Druckschrift angeben.</small></p>	<p>14. Signature(s) of applicant(s) or representative Novozymes A/S  Sten Lottrup Knudsen Place / Date Bagsværd, 22 Oct. 2002 For employees (Art. 133(3) EPC) having a general authorisation: No. 42893</p> <p><small>Please print name(s) under signature(s). In the case of legal persons, the position of the signatory within the company should also be printed.</small></p>	<p>14. Signature(s) du (des) demandeur(s) ou du mandataire Lieu / Date Pour les employés (art. 133(3) CBE) disposant d'un pouvoir général: N° <input type="text"/></p> <p><small>Le ou les noms des signataires doivent être indiqués en caractères d'imprimerie. S'il s'agit d'une personne morale, la position occupée au sein de celle-ci par le ou les signataires doit également être indiquée en caractères d'imprimerie.</small></p>

European Patent Application No 01927640.1 (PCT/DK01/00286)

ADDITIONAL SHEET

2. Additional representatives

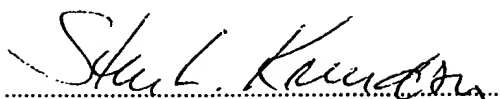
See General Authorisation No. 42893

EPO - DG 1

25. 10. 2002



Bagsværd, 22 October 2002



Sten Lottrup Knudsen, representative of applicant

25.10.2002

CLAIMS

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1. A lipolytic enzyme which is a variant of a parent fungal lipolytic enzyme, comprising one or more amino acid substitutions corresponding to any of the following in SEQ ID NO: 1:

Q15 to A, C, D, E, F, G, I, K, L, M, N, P, R, S, T, V, W, Y;

Y16 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W;

A18 to C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;

A19 to C, D, E, F, G, H, I, K, L, M, N, Q, R, S, V, W, Y;

A20 to C, D, E, F, G, H, I, K, L, M, N, Q, R, S, T, V, W, Y;

N25 to A, C, D, E, F, G, H, I, K, L, M, P, Q, R, S, T, V, W, Y;

N26 to A, D, E, F, G, H, I, K, L, M, P, Q, R, S, T, V, W, Y;

E43 to A, C, D, F, G, H, I, K, L, M, N, R, S, T, V, W, Y;

V44 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, S, T, W, Y;

K46 to A, C, D, E, F, G, H, I, L, M, N, Q, S, T, V, W, Y;

A47 to C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, W, Y;

A49 to C, D, E, F, G, H, I, K, L, M, N, Q, R, S, V, W, Y;

L52 to A, C, D, E, F, G, H, I, K, M, N, P, Q, R, S, T, V, W, Y;

Y53 to A, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W;

S54 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, T, V, W, Y;

G65 to A, C, D, E, F, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;

L67 to A, C, D, E, F, G, H, I, K, M, N, Q, R, S, T, V, W, Y;

A68 to C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;

L69 to A, C, D, E, F, G, H, I, K, M, N, P, Q, S, T, V, W, Y;

T72 to A, C, D, E, F, G, H, I, L, M, N, P, Q, R, S, V, W, Y;

K74 to A, C, D, E, F, G, H, I, L, M, N, P, Q, R, S, T, V, W, Y;

L75 to A, C, D, E, F, G, H, I, K, M, N, P, Q, R, S, T, V, W, Y;

V77 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, W, Y;
S79 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, T, V, W, Y;
R81 to A, D, E, F, G, H, I, K, L, M, N, P, Q, S, T, V, W, Y;
S83 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, V, W, Y;
S85 to A, D, E, G, H, I, L, M, N, Q, V, W, Y;
W89 to A, C, D, E, F, H, I, K, L, M, N, P, Q, R, S, T, V, Y;
L97 to A, C, D, E, F, G, H, I, K, N, P, R, S, T, W, Y;
K98 to A, C, G, H, L, M, N, P, Q, S, T, V, W, Y;
E99 to C, F, G, I, M, P, W, Y;
G106 to A, C, D, E, F, H, I, K, L, M, N, P, Q, R, T, V, W, Y;
C107 to A, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;
R108 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, S, T, V, Y;
G109 to A, C, D, E, F, H, I, K, L, M, N, P, Q, R, S, T, W, Y;
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L124 to A, C, D, E, F, G, H, I, K, M, N, P, Q, R, T, V, W, Y;
K127 to A, D, E, F, G, H, I, L, M, N, P, Q, R, S, T, V, W, Y;
E129 to A, C, D, F, G, H, I, L, M, N, P, Q, R, S, T, V, W, Y;
A131 to C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;
V132 to A, C, D, E, F, G, H, I, K, L, N, P, Q, R, S, T, W, Y;
Y138 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W;
V140 to A, C, D, E, F, G, H, I, K, L, M, N, P, R, S, T, W, Y;
L147 to A, C, D, E, F, G, H, I, K, M, N, P, Q, R, S, T, V, W, Y;
A150 to C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;
T153 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, V, W, Y;
Y164 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W;
D165 to A, C, E, F, G, H, I, K, L, M, N, Q, S, T, V, W, Y;
D167 to A, C, E, F, H, I, L, M, N, P, Q, S, T, V, W, Y;

S170 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, T, V, W, Y;
Y171 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W;
G172 to A, C, D, E, F, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;
A173 to C, D, E, F, G, H, I, K, L, M, N, Q, R, S, T, V, W, Y;
P174 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, S, T, V, W, Y;
R175 to A, C, D, E, F, G, H, I, K, L, M, N, Q, S, T, V, W, Y;
V176 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, W, Y;
G177 to A, C, D, E, F, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;
R179 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, S, T, V, W, Y;
A182 to C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;
Y194 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W;
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P208 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, S, T, V, W, Y;
R209 to C, D, F, G, H, I, K, L, M, N, Q, T, V, W, Y;
G212 to A, C, D, E, F, H, I, K, L, M, N, P, Q, R, S, T, V, W, Y;
S214 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, T, V, W, Y;
H215 to A, C, D, E, F, G, I, K, L, M, N, P, Q, R, S, T, V, W, Y;
S216 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, T, V, W, Y;
S217 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, T, V, W, Y;
P218 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, S, T, V, W, Y;
E219 to C, D, F, H, I, M, P, W, Y;
Y220 to A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W;
K223 to A, C, D, E, F, G, H, I, L, M, N, Q, S, T, V, W, Y;
S224 to A, C, D, E, F, G, H, I, K, L, M, N, Q, T, V, W, Y;
D234 to C, E, F, H, I, M, W;

I235 to A, C, D, E, F, G, H, K, L, M, N, P, Q, R, S, T, V, W, Y;

K237 to A, C, D, E, F, G, H, I, L, N, P, Q, S, T, V, W, Y;

I238 to A, C, D, E, F, G, H, K, L, M, N, P, Q, R, S, T, V, W, Y;

D242 to C, E, F, G, H, I, M, P, W, Y;

A243 to C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, V, W, Y;

P250 to A, C, D, E, F, G, H, I, K, L, M, N, Q, R, S, T, V, W, Y;

P253 to A, C, D, E, F, G, H, I, K, L, M, N, Q, S, T, V, W, Y;

D254 to C, E, F, H, I, M, P, Y;

I255 to C, D, E, F, H, L, M, N, Q, W, Y;

P256 to C, E, F, G, H, I, K, L, M, N, Q, R, V, W, Y;

Y261 to A, C, E, F, G, H, L, M, N, P, Q, R, S, T, V.

2. The lipolytic enzyme of the preceding claim wherein the parent lipolytic enzyme is the lipase produced by *Thermomyces lanuginosus* DSM 4109 and having the amino acid sequence of SEQ ID NO: 1.
3. A DNA sequence encoding the lipolytic enzyme of any preceding claim.
4. A vector comprising the DNA sequence of the preceding claim.
5. A transformed host cell harboring the DNA sequence of claim 3 or the vector of claim 4.
6. A method of producing the lipolytic enzyme of any of claims 1-2 comprising
cultivating the cell of claim 5 so as to express and preferably secrete the
lipolytic enzyme, and
recovering the lipolytic enzyme.
7. A method of producing a lipolytic enzyme comprising:

selecting a parent polypeptide which is a fungal lipolytic enzyme,
preparing a polypeptide derived from the parent polypeptide by substituting at least one amino acid residue corresponding to any of the following amino acids in SEQ ID NO: 1 and optionally substituting one or more other amino acids:

Q15, Y16, A18, A19, A20, N25, N26, E43, V44, K46, A47, A49, L52, Y53, S54, G65, L67, A68, L69, T72, K74, L75, V77, S79, R81, S83, S85, W89, D96, L97, K98, E99, G106, C107, R108, G109, T123, L124, K127, E129, A131, V132, Y138, V140, L147, A150, T153, Y164, D165, D167, S170, Y171, G172, A173, P174, R175, V176, G177, R179, A182, Y194, H198, N200, P207, P208, R209, G212, S214, H215, S216, S217, P218, E219, Y220, K223, S224, D234, I235, K237, I238, D242 to A243, P250, P253, D254, I255, P256, Y261,

testing the lipolytic enzyme activity of the polypeptide,
selecting a polypeptide having lipolytic enzyme activity and an altered property compared to the parent polypeptide, and
producing the selected polypeptide.

8. The method of the preceding claim wherein the parent polypeptide is the lipase produced by *Thermomyces lanuginosus* DSM 4109 and having the amino acid sequence of SEQ ID NO: 1.

9. A detergent composition comprising a surfactant and the lipolytic enzyme of claim 1-2.

10. A process for preparing a dough or a baked product prepared from the dough which comprises adding the lipolytic enzyme of any of claims 1-2 to the dough, wherein the lipolytic enzyme preferably has phospholipase and/or digalactosyl diglyceride activity.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 November 2001 (08.11.2001)

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(10) International Publication Number
WO 01/83770 A3

(51) International Patent Classification⁷: C12N 15/55.
9/20, C11D 3/386, A21D 8/04

(21) International Application Number: PCT/DK01/00286

(22) International Filing Date: 30 April 2001 (30.04.2001)

(25) Filing Language: English

(26) Publication Language: English

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

(71) Applicant (*for all designated States except US*):
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Bagsværd (DK).

(88) Date of publication of the international search report:
2 May 2002

(72) Inventor; and
(75) Inventor/Applicant (*for US only*): ROGGEN, Erwin,
Ludo [BE/DK]; Asavænget, DK-2800 Lyngby (DK).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(74) Common Representative: NOVOZYMES A/S;
Krogshøjvej 36, DK-2880 Bagsværd (DK).

WO 01/83770 A3

(54) Title: LIPOLYTIC ENZYME VARIANT

(57) Abstract: The properties of a fungal lipolytic enzyme can be altered by substituting amino acid residues corresponding to certain specified amino acid residues in the *T. lanuginosus* lipase. The altered property may be, e.g., an increased thermostability, an altered pH dependence, or an altered substrate specificity.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/DK 01/00286

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/55 C12N9/20 C11D3/386 A21D8/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C11D A21D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 04078 A (NOVONORDISK AS ;FUGLSANG CLAUS CRONE (DK); OKKELS JENS SIGURD (DK)) 6 February 1997 (1997-02-06) cited in the application page 1 -page 36; claims 1-55 ---	1-12, 14-18
A	WO 92 05249 A (NOVONORDISK AS) 2 April 1992 (1992-04-02) cited in the application the whole document ---	1-12,14, 15
A	EP 0 305 216 A (NOVO INDUSTRI AS) 1 March 1989 (1989-03-01) cited in the application the whole document -----	

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"8" document member of the same patent family

Date of the actual completion of the international search

2 November 2001

Date of mailing of the international search report

23 01 2002

Name and mailing address of the ISA

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NL - 2280 HV Rijswijk
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Authorized officer

Oderwald, H

INTERNATIONAL SEARCH REPORT

International application No.
PCT/DK 01/00286

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-12, 14-18 (all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: Invention 1: claims 1-12 and 14-18 (all partially)

A lipolytic enzyme which is a variant of a parental fungal lipolytic enzyme comprising an amino acid substitution at position Q15 of SEQ ID NO: 1. A DNA sequence, a vector, a transformed host, a method of producing said enzyme. A detergent composition, a process for preparing a dough or a baked product comprising said enzyme.

2. Claims: Inventions 2-87: claims 1-18 (all partially, insofar as they relate to the individual subject matter indicated below)

same as invention 1 but comprising an amino acid substitution as given in the order of the claim, wherein invention 2 comprises position Y16 and invention 87 comprises position Y261.

3. Claims: Invention 88: claims 10-12 and 14 (all partially)

A method of producing a lipolytic enzyme comprising a substitution at position D96.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/DK 01/00286

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9704078	A	06-02-1997	AU 6414096 A	18-02-1997
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			AU 657278 B2	09-03-1995
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			CA 2092615 A1	14-03-1992
			DE 69129988 D1	17-09-1998
			DE 69129988 T2	18-03-1999
			WO 9205249 A1	02-04-1992
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			EP 0548228 A1	30-06-1993
			ES 2121786 T3	16-12-1998
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EP 0305216	A	01-03-1989	AT 125865 T	15-08-1995
			DE 3854249 D1	07-09-1995
			DE 3854249 T2	29-02-1996
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			EP 0305216 A1	01-03-1989
			ES 2076939 T3	16-11-1995
			JP 1157383 A	20-06-1989
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			US 5874558 A	23-02-1999

PATENT COOPERATION TREATY

PCT

REC'D 12 FEB 2002


INTERNATIONAL PRELIMINARY EXAMINATION REPORT

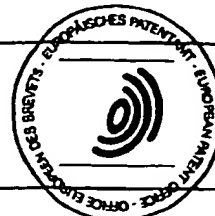
(PCT Article 36 and Rule 70)

10

Applicant's or agent's file reference 10177.204-WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DK 01/ 00286	International filing date (day/month/year) 30/04/2001	Priority date (day/month/year) 28/04/2000
International Patent Classification (IPC) or national classification and IPC C12N15/55 EPO - DG 1		
Applicant NOVOZYMES A/S et al. 25. 02. 2002		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>2</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consists of a total of _____ sheets.</p>	40
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 22/10/2001	Date of completion of this report 05/02/2002
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer COUCKE A O M Tel. (+49-89) 2399 2828



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/DK 01/ 00286

I. Basis of report

1. The basis of international preliminary examination report is the application as originally filed.

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

2. The question of whether the claimed invention appears to be novel, to involve an inventive step, or to be industrially applicable has not been and will not be the subject of the international preliminary examination (Article 34 (4) (a) (i) (ii) PCT; see also international search report) in respect of:

- 2.1 Applications having an unnecessary plurality of independent claims (generally not more than 1 independent claim in the same category is necessary; Article 6 PCT);

- 2.2 unsearched subject-matter (Article 17 (2) (a), Rule 66.1 (e) PCT).

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

3. To the extent that the international preliminary examination has been carried out (see item III above), the following is pointed out (Article 35 (2) and (3) (b) and Rule 70.7 and 70.8 (ii) PCT):

In light of the documents cited in the international search report, it is considered that the invention as claimed in the independent claims meets the criteria mentioned in Article 33 (1) PCT, i.e. it appears to be novel, to involve an inventive step and to be industrially applicable.